## Amendments to the Claims

This listing of claims replaces all prior versions and listings of the claims in this application:

1. (Currently amended) ~~Tower~~ A tower reactor comprising reaction zones for simultaneous esterification and/or transesterification and also precondensation, the individual reaction zones being connected to each other and combined in the tower reactor, ~~characterised in that~~ wherein the at least one tower reactor is constructed as follows: in the upper third, the tower reactor is configured in the form of a hydrocyclone ~~(2)~~ with attached heat exchanger ~~(5)~~ and has a supply line ~~(3)~~ for the paste, suspension and/or liquid raw material mixture, the region of the tower reactor below the hydrocyclone ~~(2)~~ is configured in the form of a downflow cascade ~~(7)~~, the cascade ~~(7)~~ is via a pipe in connection with the lower part of the tower reactor which is configured in the form of a single- or multiple-stage falling-film zone ~~(9)~~ with a preliminary pressure reduction ~~(8)~~.

2. (Currently amended) ~~Tower~~ The tower reactor according to claim 1 ~~,~~ ~~characterised in that~~ wherein the hydrocyclone ~~(2)~~ has a ~~vapour~~ vapor connection piece and is connected to a heat exchanger ~~(5) so~~ in such a manner that the product is ~~can be directed~~ directable in the natural or enforced circulation via the heat exchanger ~~(5)~~ into the hydrocyclone ~~(2)~~.

3. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 or 2, characterised in that~~ claim 1 wherein the heat exchanger ~~(5)~~ has a separate gas chimney ~~(6)~~ which leads into an upper part of the cyclone ~~(2)~~.

4. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 3, characterised in that~~ claim 1 wherein the cascade ~~(7)~~ has at least two trays ~~, preferably four reaction trays~~.

5. (Currently amended) ~~Tower~~ The tower reactor according to claim 4 ~~,~~ ~~characterised in that~~ wherein a stirring assembly ~~(10)~~ for mixing additives is ~~integrated~~ in at least one cascade region.

6. (Currently amended) ~~Tower~~ The tower reactor according to claim 4 ~~,~~ ~~characterised in that~~ wherein the penultimate cascade has a discharge pipe on which an injection lance for the supply of additives is disposed.

7. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 6, characterised in that~~ claim 1 wherein the pressure pipe ~~(4)~~ is configured as a double-walled jacket pipe which is continued in the interior of the first top

cascade as a heating coil.

8. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 7, characterised in that~~ claim 1 wherein the pressure pipe ~~(4)~~ is equipped with a volume conveyor and static mixing elements or with a mixing pump.

9. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 8, characterised in that~~ claim 1 wherein the hydrocyclone has a gas inlet in ~~the~~ a conical region thereof.

10. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 9, characterised in that~~ claim 1 wherein one of the reaction trays ~~(7)~~ in the ~~vapour~~ vapor region has an inert gas inlet.

11. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 10, characterised in that~~ claim 1 wherein the preliminary pressure reduction zone ~~(8)~~ for the falling-film part has the form of a hydrocyclone.

12. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 11, characterised in that~~ claim 1 wherein the preliminary pressure reduction zone is equipped with at least one further pressure reduction chamber.

13. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 12, characterised in that~~ claim 1 wherein the at least one falling-film zone ~~(9)~~ has a pipe field.

14. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 13, characterised in that~~ claim 1 wherein an inlet cylinder ~~(11)~~ is assigned to each pipe of the pipe fields and ensures uniform wetting of the insides of the pipes, the ~~latter~~ pipes being equipped with overlapping, non-axial slots on the circumference, a constant filling level above the series of pipes being producible because of the slot pressure loss, and having a maximum overflow with an indented crown, the slots being configured such that viscosity differences effect no change in the filling level, but ~~in fact~~ a proportional change of filling level to liquid throughput.

15. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 13 or 14, characterised in that~~ claim 13 wherein the pipe field has channels for distribution of the melt.

16. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 13 to 15, characterised in that~~ claim 13 wherein the pipes have a cold-rolled, drawn surface "m" according to EN ISO 1127 with a surface roughness $R_a$ = 0.4 to 0.6

or $R_t$ 4 to 6 $\mu$m.

17. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 13 to 16, characterised in that~~ claim 13 wherein the pipe bases ~~(9)~~ are configured in the form of a cap.

18. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 13 to 17, characterised in that~~ claim 13 wherein the length of the pipes of the falling-film zone is dimensioned such and the inner surfaces have such a structure that total wetting is effected as a function of the product viscosity (L:D $\geq 10 \leq 25$).

19. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 13 to 18, characterised in that~~ claim 13 wherein the diameter of the pipes of the falling-film zone is chosen to be larger than the largest occurring reaction ~~vapour~~ vapor bubble and in that the reaction ~~vapours~~ vapors are directed in parallel flow with the downwardly flowing product.

20. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 19, characterised in that~~ claim 1 wherein the tower reactor has dipped supply lines for the reaction gases and/or foreign gas from reaction tray to reaction tray for conducting in parallel flow through the reaction liquid [[,]] in order to produce a pressure incline ~~being produced~~ between each tray.

21. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 20, characterised in that~~ claim 1 wherein the entire tower reactor is equipped with a jacket for heating with organic heating medium in ~~vapour~~ vapor form.

22. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 21, characterised in that~~ claim 1 wherein all the heat exchange surfaces in the individual zones are equipped for liquid heat carriers for process-relevant temperature- and heat quantity distribution.

23. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 22, characterised in that~~ claim 1 wherein the tower reactor has a plate base valve ~~(3)~~ with flow-directing formation with which the supply of the raw materials is effected centrally from below.

24. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 23, characterised in that~~ claim 1 wherein the heat exchanger ~~(5)~~ has static mixing elements in order to improve mixing of the raw mixture into the reaction mixture.

25. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the preceding claims, characterised in that~~ claim 1 wherein the heat exchanger ~~(5)~~ has a three-dimensional static mixing element for producing diagonal cross-flows with simultaneous axial through-flow.

26. (Currently amended) ~~Tower~~ The tower reactor according to claim 25 ~~, characterised in that~~ wherein the three-dimensional static mixing element has cross-wise and diagonally configured sheet metal sections with carrier and retaining frames in the flow direction.

27. (Currently amended) ~~Tower~~ The tower reactor according to claim 26 ~~, characterised in that~~ wherein the sheet metal sections are at least one of perforated, undulating ~~and/or~~ , folded ~~, i. e.~~ and pleated.

28. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 27, characterised in that~~ claim 1 wherein the heat exchanger ~~(5)~~ has a heating chamber and a product chamber and also at least one separating device for horizontal separation of heating chamber and product chamber, the height of the separating device corresponding at least to the diameter of the heat exchanger pipes and the separated heat exchanger regions having a rotated offset which corresponds at most to the diameter of the heat exchanger pipes.

29. (Currently amended) ~~Tower~~ The tower reactor according to claim 28 ~~, characterised in that~~ wherein the individual separated heat exchanger regions have a different pipe division.

30. (Currently amended) ~~Tower~~ The tower reactor according to ~~at least one of the claims 1 to 29, characterised in that~~ claim 1 wherein the ~~vapour~~ vapor chambers are coated in an adhesion-reducing manner.

31. (Currently amended) Use of the device according to ~~at least one of the claims 1 to 30~~ claim 1 for continuous production of high-molecular weight polyesters by esterification of dicarboxylic acids and/or transesterification of dicarboxylic acid esters with diols in the presence of catalysts with formation of a prepolymer and polycondensation thereof to form high-molecular weight polyester.